

Abstract

A family of semiconductor devices is formed in a substrate that contains no epitaxial layer. In one embodiment the family includes a 5V CMOS pair, a 12V CMOS pair, a 5V NPN, a 5V PNP, several forms of a lateral trench MOSFET, and a 30V lateral N-channel DMOS. Each of the devices is extremely compact, both laterally and vertically, and can be fully isolated from all other devices in the substrate.